

**Commonwealth of Kentucky**  
**Division for Air Quality**

**PERMIT APPLICATION SUMMARY FORM**

(For all sources except PSD and true minor sources)

Completed by: Bryan Handy

GENERAL INFORMATION:

Name:	Duke Energy Marshall County, LLC
Address:	Intersection of Paducah Louisville Railroad and Highway 1523, 4 miles west of Calvert City in Marshall County, Kentucky
Date application received:	December 9, 1999
SIC/Source description:	4911/ Electric Generation
AFS(10-digit) Plant ID:	21-157-00053
Application log number:	G393
Permit number:	V-00-020

APPLICATION TYPE/PERMIT ACTIVITY:

<input checked="" type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
__Administrative	<input checked="" type="checkbox"/> Title V
__Minor	<input type="checkbox"/> Synthetic minor
__Significant	<input type="checkbox"/> Operating
<input type="checkbox"/> Permit renewal	<input checked="" type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input checked="" type="checkbox"/> NSPS	<input type="checkbox"/> SIP
<input checked="" type="checkbox"/> PSD	<input type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:017, 1(2)(b) or 51:052,1(14)(b)	

MISCELLANEOUS:

- ☒ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☐ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☒ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual (tpy)	Potential (tpy)
PM	134	134
SO <sub>2</sub>	160	160
NO <sub>x</sub>	655.9	655.9
CO	538.9	538.9
VOC	38.6	38.6
LEAD	.14	.14
H <sub>2</sub> SO <sub>4</sub>	18.7	18.7

SOURCE PROCESS DESCRIPTION:

The Marshall County Generating Station, is to include eight (8) General Electric 7EA natural gas-fired combustion turbines which are to operate in simple cycle mode with a nominal output capacity of 80 megawatts (MW) each. The facility is to produce electricity during periods of peak electricity demand on a daily and seasonal basis.

EMISSION AND OPERATING CAPS DESCRIPTION:

The plant is to be limited to operating 2500 hours per year or less for each unit. The plant may fire low sulfur diesel fuel as a secondary fuel for up to 500 hours per year for each unit. The plant shall not fire diesel fuel for more than 16 hours in any consecutive 24-hour period. All combustion turbines must be operated at 60% load or greater except during periods of startup, shutdown, and malfunction.

The sulfur content of fuel fired in the combustion turbines must contain less than 0.05% sulfur by weight.

The permittee has accepted NO<sub>x</sub> BACT emission limits of 12 ppmvd corrected to 15% oxygen on an hourly average and 9 ppmvd corrected to 15% oxygen on a rolling 12-month annual average while burning natural gas. The permittee has also accepted a NO<sub>x</sub> BACT emission limit of 42 ppmvd corrected to 15% oxygen on an hourly average while burning low sulfur diesel fuel. Additionally, CO emissions shall be limited to 25 ppmvd at 15% oxygen and 20 ppmvd at 15% oxygen on an hourly average while firing natural gas and low sulfur diesel fuel respectively. Particulate emissions from each turbine shall be limited to 10 lbs/hr while firing natural gas and 26 lbs/hr while firing low sulfur diesel fuel.